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AUTHOR Feniczy, George
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ABSTRACT

This paper describes a program at the Technical University of Budapest which is designed primarily to teach scientific English while at the same time improving everyday conversational English. The program combines the traditional textbook method and a new method whereby students in the first term read and translate technical material on a homework basis, and in the second term present lectures to the class on topics of their own choosing, technical and otherwise. It is emphasized that this method is of benefit not only to the student, but also to the teacher, for both improve their proficiency with technical English. (AM)

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A NEW APPROACH TO TEACHING SCIENTIFIC ENGLISH

by

George Feniczy, D.Ph.

The basic aim of teaching English at the Technical University of Budapest is to introduce the students into scientific English. Both the beginners' and the advanced levels have their particular problems, chiefly because of the small number of weekly classes—90 minutes, once a week. While at the beginners' stage we can fairly well rely on the textbook—grammar—practice method, the advanced level soon outgrows this concept, as it happened in our practice.

When language teaching began at our University, the teachers' collectives compiled and adapted technical-scientific textbooks, included grammar, prepared exercises. Accordingly, reading practice, vocabulary, translation, discussion of grammatical problems were given in the English classes. This system seemed fairly effective for a few years. However, with the improvement of English teaching in the grammar schools, the advancement of international contacts, the growth of tourism, the increasing exchange of books, periodicals and especially the explosion-like development of technical sciences this early method proved ineffective. Students coming from the grammar school with a fair knowledge of English began to find this type of English classes dreary; they wanted active and practical knowledge of the language, and that included technical and everyday English alike. While students gave voice to their dissatisfaction in the classroom and at youth meetings, the teachers began to try and find a new method for improving our teaching within the given time limits.

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At the Faculty of Mechanical Engineering the first step was a 5-page obligatory reading from an original English scientific book or professional journal after the student's own choice. This was in the form of homework, while in class the textbook system continued. At the end of term the students had to give account of their reading by translating passages orally, before the teacher. During the term the students were encouraged to consult their teachers for problematic passages.

This original idea was soon transformed into a new method and

it has been going on for some years now with increasingly good results. It is as follows:

At the beginning of the 5th term /3rd year/ the teacher discusses with the class both systems, emphasizing the advantages of free reading in contrast to the textbook system. The students invariably decide upon the new method. Then each student chooses a scientific book or periodical according to his/her own particular interest and reads one page /1250 n's/ each week, 10 pages altogether over a term. They will write out the words, prepare the translation, and mark the passages they are unable to translate. At the beginning of each English class there is an individual consultation where the problematic parts are explained by the teacher. This usually takes 10-15 minutes. If a sentence contains a particular lexical or grammatical problem, it will be written on the blackboard and discussed in public. The students first try to translate individually, then the correct solution is given by the teacher. This offers a possibility for explaining special problems in English at a higher level than plain descriptive grammar which is, by the way, also explained by the teacher in the next phase of the class. Since the students had already learned and practised grammar at secondary schools, descriptive grammar is dealt with in the form of a survey.

Having read about 5-6 pages, that is, after half-term, the students begin to give lectures in English. The lectures are, in most cases, based on the topics they are reading, but, with the teacher's consent, they can give lectures on any freely chosen topic. For illustration, I give here a few lectures in the past three years:
in the field of Mechanical Engineering: Metallurgy, Blast Furnaces, Welding /various aspects/, Deformation— Stress and Strain, Radiant Heating, Human Comfort, Cutting and Chipping, Cold Die Forging, Tractors, Trucks and Cranes, Air Cushion Vehicles, Processing of Milk, Butter, Fats and Oils /Machines of.../, Foundations of Chocolate Manufacture, Manufacture of Maccaroni Products;
in the field of Basic Sciences: Quantitative Mechanics, Dimension Analysis, Analytical Mechanics, Approximation Theory, Evolution of Physics, Atomic Structure, Mathematicians Delight;
in other fields of Technical Sciences: Transistors, Electronics in Industry, Digital Computers, Robots, Television Tubes, Automotive Safety, Architectural Systems, Suspension Bridges, Properties of

Air, Environment and Nuclear Power, Four-Dimensional World, Sound Recording and Reproducing, Solar Systems, Teaching Machines; in other, not strictly technical fields: /please remember that they are students of Mechanical Engineering/ The Biological Bomb, Sail Plane over the Channel, A Walk in London, Albania, Tallin, Greece, Mauritius, The Rocky Mountains, Mount Everest Expeditions, Lunar Exploration, the Beatles, Beat Music, Jimmy Hendricks, Gainsborough and Reynolds, Pottery /Hungarian Folks Art/, Fashion, Ready-to-Wear Garments, Work in the Students' Scientific Circles, The English Language, the History of the English Language, New Ways of Writing English /examples of the student's own collection/. This enumeration of topics is not nearly complete.

The wide variety of topics shows that the students interest covers a far greater field than any textbook could ever cover. Our experience shows that the students enjoy giving their lectures, make serious preparation, bring in illustrating materials, pictures, colour slides, even 8 mm movie films, tape recordings; they make drawings, sketches on the blackboard /sometimes even in the break before the English class/, write mathematical formulae, show and draw graphs for better explanation. The student-lecturer may use his/her notes, but many of them hardly ever do so. Thus, independent, free reading and the lectures increase their interest in studying scientific English and gives them the all-important feeling of success, achievement. This is particularly true for the lectures, which are discussed after they had been given. Opinions from the audience are followed by the teacher's final evaluation and appreciation of the lecture as well as of the lecturer's qualities. This part has an exceptional educational value, as advice is also given on how to deliver a lecture /in fact, speak in public/. Indeed, many students show definite improvement in the course of the following terms. The system gives help to the work of the Students' Scientific Circles, where much documentaion in foreign languages is required. It widens the field of interest of the students while encouraging them at the same time to acquire an even wider knowledge of English. Quite often questions are put to the lecturer in English, though it has happened that a heated scientific argument developed and dropped the English and went on in Hungarian. The lectures give the students a good chance to learn how to speak before an audience and help

them find their voice in human communities.

Another important bearing is the evolution of a new form of contact between teacher and student. The students begin to feel that the teacher is <u>really</u> their professional <u>friend</u>, an expert in language problems whom they can consult and ask for help and advice. After lectures, in the breaks, it is quite common that the students stand around the teacher and talk freely to him or her, discussing sometimes even personal problems, or problems of the students' life. One can feel that they are confident, they are ready to accept the teacher as a friend, too. And there is no greater feeling for a pedagogue.

Thus, experience has shown that the system has a fair tendency to develop into a tutorial system. And so we have come to a problem the teachers have to face: how to be an expert in the English of such a variety of technical fields?

Again, this system has shown its advantages. When teachers of English graduate, their knowledge of English covers the field of literature, prose, poetry, drama, some philosophy and the like, but practically no knowledge of scientific English. So, if they come to teach at our University, their postgraduate training must take this entirely new direction. And the above enumeration of lecture topics reveals the widest range of new information in scientific English. Without undue difficulty, just by listening attentively to the lectures, the teachers acquire a great number of technical words and information. True, the teacher must have a feeling for technics, for science; and he must know English very well to be able to give a perfect grammatical translation /including semantical variations/ of any problematic passage. He also must have a basic information in science and modern technics. This is not very difficult to acquire even for very young teachers through a little regular reading. And the new form of relation between teacher and student brings help again. The students, whose technical knowledge is fairly strong after 2-3 years of studies at the Technical University , are only too willing to help the teacher, giving him full explanation of a particular technical problem. They are very pleased that they can make use of their knowledge. They do not expect their language teachers to be <u>experts in technical problems:</u> all they expect is a <u>perfectly good explanation of the linguistic problem</u>. They are very happy when the

correct translation /corrected by the teacher/ coincides with their acquired technical knowledge. And after a few years of such practice, the teacher gathers so much technical information /mostly very up-to-date/ that he or she can stand on firm ground even in technical problems.

I have spoken so far only of the advantages, and the picture is all too bright and sunny. However, there are dark sides, too. First of all, the problem of the technical vocabulary. The students in the course of their reading, get a good practice of using the dictionary; but most of them have no access to the specialized technical dictionary, or rather, have not the time to go to the Library and look up the technical words. So the teacher has sometimes a hard time when students start asking separate words which have a common, everyday meaning, but quite a different one in the technical text. Truly, this is the thinnest ice for the teacher— and it is only practice which improves his position. The remedy is that the students must be warned at the very beginning to give the words in the context: then the teacher stands a good chance of finding the correct meaning.

Another problem is that students have different levels of knowledge and experience in English, and, quite naturally, different qualities for giving lectures. It has often happened that, after an excellent lecture, the next student showed reluctance to deliver his own saying that his pronunciation was bad, or that he would have to use his notes more often, etc. This is again where the teacher must put in human psychology. A few encouraging words before, and many praising words after the lecture bring very good results. It also happens that students fall short of time, especially towards the end of term, when examinations must be prepared, drawings must be presented, records must be shown, etc. I had a group once which was extremely enthusiastic at the beginning, then nearly revolted against the system at the end of the term. I had to point out that I had warned them in advance to prepare their lectures in good time. They did their duty finally, but feelings were not very happy. I am glad to say that it does not happen very often.

Finally, one last word about "everyday English". This new system gives surprisingly much time for everyday conversation at the end of each lesson, before the lectures begin. We can go to

the language laboratory, listen to English pronunciation and practice it, listen to short stories, discuss them, hear reports, essays, newsletters. The students like this kind of practice, they ask for more and more, some very high-level groups even demand that the grammar shall be discussed in English. And when the lectures come, they experience a mixture of scientific and everyday English— in fact, scientific English is the language of discussion. This, however, is a weak point as yet: a new way of improving it must be found.

I must no forget one essential point. Even the most enthusiastic and conscientious students needs checking /they expect it, too/. Experience has shown that, apart from lesson-to-lesson checking, a general checking must be made at mid-term and also at the end of the term. This is done by oral translation from the 5-6 pages /or 10 pages at the end of term/, the sentences or passages chosen at random by the teacher. After very good lectures, the final checking may be omitted as a reward.

When I try to sum up, I can say that this new system gives the students an increased interest both in everyday and in scientific English; it shows them the importance of English as on of the great means of acquiring up-to-date technical information while helping them to easy communication with poeples even outside the English-speaking territories. They get more interested in their studies and have a feeling of satisfaction at the possibility of making their own choice. Finally, it gives them a fair chance of developing skill in speaking before an audience and also the gratifying knowledge of their ability to make themselves understood in English. An last not least, it gives the teacher new ways of exerting his professional and pedagogical knowledge and skill.

GEORGE FENICZY, D.Ph.
INSTITUTE OF LANGUAGES .
TECHNICAL UNIVERSITY OF BUDAPEST.